From the Director

In all dimensions of our lives, learning takes place in a diverse range of likely—and unlikely—places. In this issue of *Focus*, contributing authors underscore the ways they engage students in learning outside traditional classroom settings and illustrate the value of these experiences to learners and to the communities in which they learn.

Lynn Taylor
Centre for Learning and Teaching

DALHOUSIE UNIVERSITY
Inspiring Minds

Student Learning Outside the Classroom: Transcending Artificial Boundaries*

by George D. Kuh, Katie Branch Douglas, Jon P. Lund, and Jackie Ramin-Gyurnek

Learning and personal development during the undergraduate years occurs as a result of students engaging in both academic and non-academic activities, inside and outside the classroom (Astin, 1993; Pascarella and Terenzini, 1991). To enhance student learning, institutions must make classroom experiences more productive and also encourage students to devote more of their time outside the classroom to educationally purposeful activities (Kuh, Schuh, Whitt and Associates, 1991).

WHAT DO OUT-OF-CLASS EXPERIENCES CONTRIBUTE TO VALUED OUTCOMES OF COLLEGE?

This Report summarizes the research on the contributions of out-of-class experiences to valued outcomes of postsecondary education, including (a) cognitive complexity (e.g., critical thinking, intellectual flexibility, reflective judgment); (b) knowledge acquisition and application; (c) humanitarianism (e.g., interest in the welfare of others); (d) interpersonal and intrapersonal competence (e.g., self confidence, identity, ability to relate to others); and (e) practical competence (e.g., decision making, vocational preparation) (Kuh, 1993). In addition, out-of-class experiences linked to persistence and educational attainment also are discussed.

Students who expend more effort in a variety of activities benefit the most intellectually and in the personal development domain (Astin, 1993; Chickering and Reisser, 1993; Pascarella and Terenzini, 1991). Some experiences, however, are more likely than others to foster desired outcomes. For example, living in an academic-theme residence is associated with gains in critical thinking, intellectual development, and aesthetic appreciation; involvement in student government has been linked to gains in student understanding and appreciation of human differences.

WHAT CONDITIONS FOSTER STUDENT LEARNING OUTSIDE THE CLASSROOM?

The following institutional conditions encourage students to use their out-of-class experiences to educational advantage:

1. Clear, coherent, and consistently expressed educational purposes;

2. A guiding institutional philosophy that values talent development as a primary goal of undergraduate education;

3. Complementary institutional policies and practices congruent with students' characteristics and needs;

4. High, clear expectations for student performance;

5. Use of effective teaching approaches;

6. Systematic assessment of student performance and institutional environments, policies, and practices;

7. Ample opportunities for student involvement in meaningful out-of-class activities;

8. Human scale settings characterized by ethics of membership and care; and

9. An ethos of learning that pervades all aspects of the institution.

HOW CAN INSTITUTIONS ENHANCE STUDENT LEARNING?

Any institution can enhance student learning by using its existing resources more effectively. The key tasks in transcending the artificial boundaries between in-class and out-of-class learning experiences are (a) to break down the barriers between various units (e.g., academic departments, administrative services, student affairs) and (b) to create situations in which students examine the connections between their studies and life outside the classroom and to apply what they are learning. Key steps are for institutions to address the importance of out-of-class experiences explicitly in the institution's mission, develop a common understanding of the desired outcomes of undergraduate education and the combination of institutional conditions and student experiences most likely to produce these outcomes, assess regularly the impact of out-of-class environments on students, and shape student cultures in ways that foster responsible behavior.

WHAT CAN GOVERNING BOARDS AND PRESIDENTS DO?

Governing boards positively influence student learning beyond the classroom when they support such experiences financially, base institutional policies on accurate data about the quality of students' experiences, and hire a president who values undergraduate education and understands and appreciates the contributions of life outside the classroom to institutional and student goals. The president should periodically remind stakeholders about the value of out-of-class experiences and make decisions based on accurate information about students and their learning.

WHAT CAN ACADEMIC AND STUDENT AFFAIRS ADMINISTRATORS DO?

Senior institutional officers help create an ethos of learning when they send consistent messages about the complementarity of in-class and out-of-class experiences, establish strong working relations with each other and communication links with the faculty, translate what the institution values into behavioral terms for student performance outside the classroom, disseminate data about students and their experiences, and ask students to think about, and apply, what they are learning in class to life outside the classroom, and vice versa.

WHAT CAN FACULTY MEMBERS DO?

Faculty influence out-of-class learning environments by the nature and amount of academic work they assign. To link the curriculum and academic goals more closely with student life outside the classroom, faculty can structure assignments that require students to illustrate how they are using class material in other areas of their lives, use active learning and other effective pedagogical strategies, hold students to high expectations, and indicate clearly what they must do to succeed academically.

WHAT CAN STUDENTS DO?

Students take responsibility for their own learning when they participate in out-of-class activities and events that enrich the educational experience (e.g., orientation, guest lectures, internships), develop a portfolio of out-of-class learning experiences and associated benefits, and discuss with others their academic progress and how what they are learning in classes applies to other aspects of their life.

HOW CAN ARTIFICIAL BOUNDARIES BETWEEN CLASSROOMS AND OUT-OF-CLASS EXPERIENCES BE TRANSCENDED?

The conditions that foster student learning outside the classroom cannot be created by any one individual. However, an institution can increase the likelihood that students will experience college as a seamless web of learning across classroom and out-of-class settings by linking programs and activities across the academic and out-of-class dimensions of students' lives and removing obstacles to students' pursuit of their academic and personal goals. For this to occur, faculty, administrators, and others must challenge students and each other to view learning as continuous and contagious in the biology lab, library, academic advisors' office, residence hall lounge, place of employment, student union, community service, and playing fields.
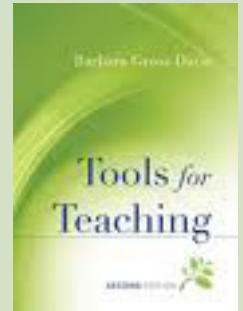
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Student Learning Outside the Classroom
Transcending Artificial Boundaries

George D. Kuh, Katie Branch Douglas, Jon P. Lund,
and Jackie Ramin-Gyurnek

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A copy of the full report is available to download at http://www.eric.ed.gov/ERICWebPortal/contentdelivery/servlet/ERICServlet?accno=ED394444

What's New in the CLT Resource Library

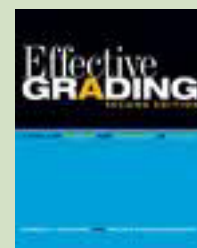### *Tools for Teaching 2nd Edition*
by Barbara Gross Davis

This is the long-awaited update on the bestselling book that offers a practical, accessible reference manual for faculty in any discipline. This new edition contains up-to-date information on technology as well as expanding on the ideas and strategies presented in the first edition. It includes more than sixty-one chapters designed to improve the teaching of beginning, mid-career, or senior faculty members. The topics cover both traditional tasks of teaching as well as broader concerns, such as diversity and inclusion in the classroom and technology in educational settings.

Effective Grading 2nd Edition: A Tool for Learning and Assessment in College
by Barbara E. Walvoord and Virginia Johnson Adnerson

Effective Grading...provides a proven hands-on guide for evaluating student work and offers an in-depth examination of the link between teaching and grading. Authors Barbara E. Walvoord and Virginia Johnson Anderson explain that grades are not isolated artifacts but part of a process that, when integrated with course objectives, provides rich information about student learning, as well as being a tool for learning itself. The authors show how the grading process can be used for broader assessment objectives, such as curriculum and institutional assessment.

Plants in the Human Landscape
Learning by Design

*Deborah Buszard,
Environmental
Programs*

Our lives are completely dependent on plants: everything we eat, much of what we wear, and where we live all derive from plants. But even more importantly the experiences of nature we prize—wilderness, views, parks in cities, recreational areas, and green spaces—are all plant based. If you think of a beautiful outdoor place, chances are it includes green space, trees, and maybe flowers. In 2005, after many years of research and teaching in plant science, I used a sabbatical leave to explore our human relationship with plants, particularly how we use them in our built environment and how we design gardens and public spaces. That year led me to develop a new undergraduate course to look at the role plants play in the built environment, to explore the human relationship with plants, and to teach the basics of landscape design.

One might ask why, after many years of teaching and research in plant science, I thought that a course on the human relationship with plants was what Biology students needed. Traditionally such programs teach students about plants and the natural environment from a scientific perspective, and about the negative impacts of human activity (urbanization, forestry and agriculture) on the environment. Graduates of such programs understand plants' biology, plants' role in ecosystems and even why humans value plants for purposes such as food and fiber, but are often completely ignorant of the extraordinary impact plants have on human behavior and society. From the design of our cities to our recreational activities, plants play a huge role in creating esthetically pleasing environments.

Today more than 50% of humans live in cities. Most people in the world rarely, if ever, experience

Image courtesy of Design Communications Group. Used with permission.

wilderness. Their experience of nature is limited to green spaces, parks and gardens in the cities they live in. I wanted to create a course that would help students understand how we use plants to recreate nature in the built environment and how we benefit from having plants in our daily lives. Perhaps more importantly, I wanted to give the students an opportunity to develop another way of looking at plants for their esthetic values rather than as scientific specimens, components in ecosystems or as sources of food or fibre.

Plants in the Human Landscape (ENVS 3225), explores the relationship between humans and plants in the built environment and uses designed urban landscapes, such as parks and gardens, as the teaching laboratory. It introduces students to the history of human use of plants for esthetic and recreational purposes, the modern use of plants in cities, and the importance of plants for human health and well-being in urban environments. I chose to use drawing, instead of writing, as the primary means of communicating ideas. Students work through a series of drafting, sketching, and design exercises culminating in production of landscape designs. The course includes field visits to local sites, such as the Halifax Public Gardens, an outstanding example of Victorian pleasure garden design, and the Irving Botanical Gardens at Acadia University, an extraordinarily well designed series of gardens and naturalistic plantings showcasing the native flora of the region. The class then selects a design theme and sites. These form the basis of the group work the students do in selecting and evaluating a site, considering the design mandate which could perhaps be a redesign of an area for a specific theme or purpose (e.g., as an historical garden, a native plant garden, a therapeutic garden or a garden designed for teaching purposes). Students begin with simple drafting exercises and

work toward three dimensional representations, becoming more confident in their skills and discovering heretofore unknown talents. They also keep sketchbooks in which they draw outdoor places which they find particularly attractive and note the features they particularly admire.

Originally intended for Science undergraduate students, over the past four years ENVS 3225 has attracted students from Community Design and other programs as diverse as History and Engineering. About 50% of the class is usually made up of Science students, typically Biology Majors. For most, it is the first time they have thought about plants and the important esthetic role they play in urban areas. The course appeals to students with an interest in plants who are looking for a different approach to their study.

Many of the Science students are initially very nervous about taking a class that is visual rather than written, but most are amazed how quickly and easily they become comfortable, and how much progress they make in visual communication as the semester progresses. The class begins with very simple drafting and drawing assignments. Students quickly realize that drawing and visual representation are skills which can be learned just as easily as scientific writing or using Excel spreadsheets, and they can soon do it well enough to communicate their ideas. Through the semester students complete site inventories and analyses, develop design concepts and sketches, and finally, prepare a poster showing a fully detailed design and planting plan for a real site. The Community Design and Science students bring very complementary background skills and knowledge to the class which really work well in the group projects.

One of the most exciting aspects of designing gardens is that plants are ever changing, different in every season, and grow year by year. Unlike other types of spatial design, a garden is not fixed but dynamic, and plantings must be made with this in mind. This may be an important new concept for students, who realize for the first time that urban green spaces are in fact designed: Who decided where the trees would be planted at the Public Gardens, and why? Why does one space in the Public Gardens feel so much more pleasant to be in than another? Why is one view appealing and another displeasing?

Out of class learning is essential in this course to give the students an opportunity to experience being in the spaces, to understand how they perceive them, and to learn what works and what doesn't. (There are plenty of bad design examples!) Students are frequently amazed when they realize that the human experience of the urban landscape can be so easily improved by good design. Students' eyes are opened to the quality of the urban environment, how it can be enhanced, and how important plants are to human well-being.

The course is organized as a single 3-hour class per week, which facilitates field trips and studio work. The out-of-class components are integral to the final design project and the

sketchbook. Students are graded on their sketchbooks, site inventories and analyses, design concept proposals, and the final design project presentation. The lectures focus on the history of garden and park design, plants and human well-being, therapeutic gardens and horticultural therapy, the design process, and environment and sustainability issues of gardens and parks. Students spend much of class time working in groups and engaging in peer critiques of their work. As the semester progresses, the focus in lectures is on the design process, helping students formulate ideas and create a design. This is a challenge for students who may never have been asked to design something before. Almost uniformly students find this a very exciting and liberating process; many produce really excellent designs and execute them well. Some are outstanding.

by Amanda Kosloski. MPLAN PLAN 3225 (28-Nov-07)

JUST@Dal: Fostering Student Engagement through Production of an Undergraduate Science Journal
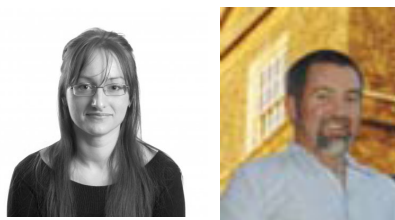
*Tanya Bilsbury, Editor-in-Chief
and Tim Juckes, Faculty Advisor*

The *Journal of Undergraduate Science Today at Dalhousie (JUST@Dal)* is a student-run undergraduate science journal at Dalhousie University. The journal was established in 2008 by a group of undergraduates from the Department of Psychology and Neuroscience, with faculty advisor Dr. Tim Juckes, to promote science research and literacy among undergraduates. Since then, the editorial board has expanded to include students from a broad range of science departments.

The journal invites students to publish their original research or contribute as editors to the manuscript and review process, giving undergraduates a valuable opportunity to develop their skills in science writing, while learning about the academic publication process. All submissions must pass an anonymous faculty review process to be considered for publication. In addition, an editorial board of undergraduates and the faculty advisor review manuscripts for style, decide which manuscripts to publish, and communicate with the authors. The editors are responsible for the production, dissemination, and launch of each issue of the journal.

The articles submitted by students to the journal must represent original research.

Manuscripts might come from honours projects, upper-year independent or directed research classes, or independent projects undertaken in Dalhousie's Integrated Science Programme (DISP). Submission requires the informed approval of any coauthors and the student's supervisor, as lab projects often involve input from many different parties. Although the journal focuses primarily on empirical research, papers with a theoretical, historical, or philosophical perspective are also welcome. The initial work leading to a manuscript might emerge from a particular course, but authors must do a significant amount of out-of-class work to create a suitable manuscript.

The inaugural issue of the journal was launched in November 2009 with a public lecture by Dr. Armand Leroi, a former Dalhousie undergraduate, who is now a noted evolutionary-developmental biologist, author, and BBC documentarist at Imperial College, London. Dr. Leroi's talk, *Thinking like Darwin*, traced Dr. Leroi's travels following Darwin's Beagle expedition. The publication of the journal followed eighteen months of dedicated work by undergraduate editors and authors, and depended on the generosity of numerous Dalhousie sponsors, as well as the time and expertise of faculty members and graduate students who acted as anonymous reviewers.

The journal fosters student engagement by offering science students the opportunity to be involved with a hands-on, out-of-class learning experience that will contribute to their professional development. Undergraduate authors and editors gain experience and training in academic science writing. Students who commit to the editorial executive gain experience in team work, management, and administration, and use these skills to contribute to the creation and direction of the journal. In addition, the design editors can develop their creative skills by working on layout, typesetting, and cover design, as well as the creation of promotional materials.

Students are also involved in efforts to raise funding, which pays for print copies of the journal, promotional materials, and a formal launch event at the time of release. In its first year, the journal was sponsored by the Dean's Office, Faculty of Science; the President's Office, Dalhousie University; the Dalhousie Science Society; the Office of Outreach and External Relations; Student Services; and Satlantic, a corporate sponsor. Students meet with prospective sponsors to seek financial support for the journal, and produce quarterly reports for sponsors to keep them apprised of the journal's progress.

The feedback from those involved in the production of the first issue suggests the journal offers a rewarding extra-curricular experience for those involved. Andy Hong, an undergraduate in Microbiology and Immunology and a design editor since Spring 2009, observed the publication process while contributing his

artistic creativity to the design of the journal's promotional materials. "I really enjoyed the diverse experiences that I have had with the journal," said Hong. "From editing to creative design, the whole process helped me to better understand what publication, particularly scientific writing, is all about. I never imagined that this much effort was put into publication; indeed, consistency, patience, and precision are some of the words that I have learned to give greater value. Moreover, I saw what would constitute a better research paper, especially in terms of graphical representations. As a prospective honours student who will be conducting independent research in the near future, this has been one of the most important experiences in my university life."

Another editor, Nicole Crozier, at first worried that the journal expected too much, but has since come to appreciate setting such a high standard: "The most rewarding part of being an editor is seeing a paper through the publication process from beginning to end. The time spent editing and revising a paper, on the part of both the editor and the author, is huge. Having been in charge of the revisions for a particular paper, I must have emailed the author more than half a dozen times asking him to change things, from something large like clarifying an entire section, to something small like rewording a sentence. Sometimes I was surprised the author didn't just up and quit. But seeing how much a paper has improved by the end of the process makes all the work involved entirely worthwhile. And

seeing the article in print makes it even more worthwhile." Another editor has noted that "there's something about working really hard on an important project, and seeing it come to fruition through teamwork, that makes me feel good about my skills, my future, and what I can contribute to others – and that's an out-of-class learning experience that transfers positively to the rest of my university experience."
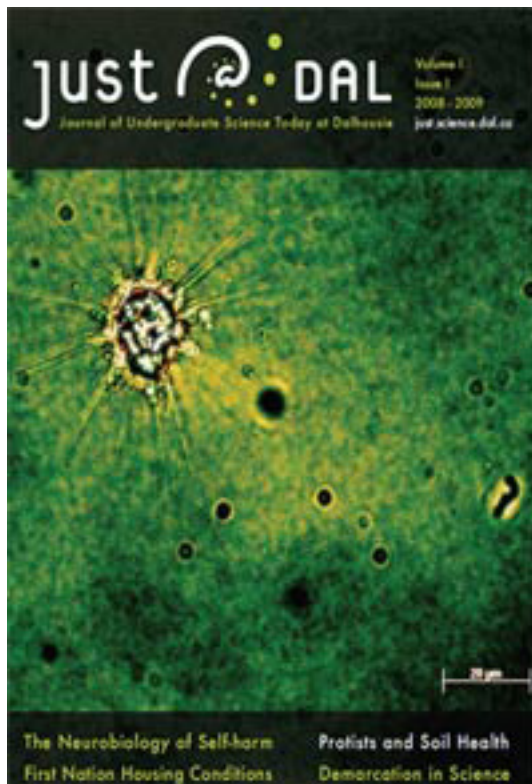
The authors whose work was published in the inaugural issue have also commented on the process. One author, for instance, wrote: "Good work on the journal, by the way. It was the most professional journal I ever had the pleasure of working with during my undergraduate career. From submission to revision to publication, I was met with the utmost professionalism all along the way."

Faculty and sponsors appreciate the journal, too. One of the journal's sponsors, for instance,

sent the following message to the editors: "I have been meaning to write to you and let you know what a great job you did on this inaugural issue. It is professionally put together, and of very high quality. We are proud to be associated with it."

Although volunteering to work on the journal falls outside a student's academic requirements, what students learn through this process contributes to their writing, whether that be writing their next lab report or honours thesis, or the preparation and publication of a manuscript during graduate school. Furthermore, students who have experience in editing and publishing can emphasize those skills in their résumés.

The editors of the journal are currently working on the second volume of the journal, expected to be released in November 2010, and welcome interest from those who would like to be editors or have a manuscript considered. Although the main focus is on reports of original empirical studies, the journal also considers discussions, reviews, and shorter comments (e.g., DISP reports). Faculty, especially, can encourage their students to submit papers or volunteer as editors. For more information, and submission guidelines, visit just.science.dal.ca.

Copies of the first issue of the journal are available for $5.00 from the University Bookstore or Dr. Tim Juckes (494-1855, or just@dal.ca), and a PDF of the journal is available on the journal's web site at http://just.science.dal.ca/. The first issue is also available in the reading rooms of most Faculty of Science departments, and chairs, undergraduate advisors, and sponsors have received copies, too.

Enhancing the Educational Value of Co-op Work Terms

*Anne Marie Coolen, Director
Engineering and
Computer Science Co-op*

It is often said that experience is the best teacher, but it should also be said that learning from experience is not automatic. Experiential learning programs like co-operative education, service learning, apprenticeship, and internship have many things in common, not the least of which is the fundamental and significant challenge of creating mechanisms to ensure that the intended learning is derived from the experiences. This article will explore that challenge as it relates to the Engineering Co-operative Education Program at Dalhousie.

Co-operative Education Programs, to be successful, must balance the educational objectives of the faculty, the human resource requirements of a diverse base of employers, and the career and learning expectations of students. Each of the 600 employer organizations we deal with annually has its own unique set of needs, expectations, and processes. These employers invest an average of $10,000 per student in recruitment, salary, and training costs,

so they are looking for a return on their investment. Our 700 students also place an extremely high value on their co-op experiences, which they view as the gateway to their career success, a means to finance their studies, and an opportunity to test drive their classroom knowledge. The third element in this balancing act is the unique set of educational goals that each of the 10 different academic programs bring to bear on the process. Work terms must contain enough discipline-related work experience in order to qualify for co-op.

Meeting the needs of these three diverse partner groups is operationally complex. Most co-op programs across the country focus the bulk of their resources on developing co-op jobs, preparing students to compete for the jobs, and managing the process of matching students to those jobs. The educational aspects of our programs become secondary to that 'placement process' in part because, unless a student secures a placement the educational component is moot,

but also because developing ways to predict, control, measure and maintain the quantity and quality of learning that occurs is extremely challenging.

Fortunately, the Engineering Co-op program is now well positioned to turn its focus to increasing the educational value of co-op work terms. To accomplish this challenging goal we put together a small committee which has been drawing heavily on the expertise of the Centre for Learning and Teaching to develop a new curriculum for students to follow while on their work terms.

We started the design process with the following goal in mind—to create an experience-based learning curriculum with assignments that are:

1. Authentic and meaningful to students

2. Embedded rather than added on at the end

3. Reflect the Engineer-in-Training (EIT) program used for the Professional Engineering (P.Eng) designation

4. Develop technical writing skills

5. Teach the habit of self-directed professional learning

6. Balance the student's academic work load with the placement work load

Next, we explored the pedagogy of experiential learning conceived as learning through reflection on doing: reflection for action, reflection in action, and reflection upon action (Schon, 1983). Effective experiential learning requires a concrete

Photo by Allison Chua, Mechanical Engineering Co-op.
Used with permission

experience, observation and reflection on that experience, formation of abstract concepts based upon the reflection and testing new concepts (Kolb, 1984). The conditions for experiential learning include:

• structured opportunities to reflect

• time to reflect on one's own

• a sense of safety about the reflective process

• time to talk in a reflective manner with colleagues, mentors, supervisors

• opportunity to engage in structured observation

(Richert, 1990)

Using these ideas, we developed a curriculum that requires students to create a Professional Practice Portfolio based on assignments that move from reflecting for action by setting learning goals, to reflecting in action by keeping monthly experience records, to reflection upon action by writing a final capstone report. In each assignment the student describes significant learning events they have experienced during the prescribed time period and generates a critical analysis of what they learned from the event, both in relation to their learning goals and other learning, and how they will use that knowledge in the future.

To assist the students with developing appropriate learning goals, we developed a matrix of generic engineering goals that dovetails with the types of work experience required for the P.Eng designation. From this matrix, students select five generic goals that are appropriate for their specific work term and develop them into specific goals which are then approved by the employing supervisor. To allow for the broad spectrum of work experience, the matrix offers a wide range of goals that become increasingly more advanced as work terms progress.

The curriculum also includes a work performance review completed by the employment supervisor at the end of the work term. Students must include a reflection on what was learned from the review in the capstone report. Upon return to campus there is a 'debriefing' session where students network with their classmates and share their learning experiences.

In order to find out if the new curriculum was on the right track, we delivered it as a pilot to three groups of students over the past year. Our goals for the pilot were to determine the following:

• whether the student's work term experience is enhanced by the new curriculum

• in what ways, and to what degree the work term experience is enhanced

• the average time required for students to complete the curriculum

• any challenges the student had with the curriculum

• the effectiveness of each component of the curriculum as it related to their learning

• the time and resources required to administer the curriculum

• the impact of the curriculum on the student's work supervisors

The early results of the pilot indicate that we are on the right track. For example, the students who completed the pilot reported a significant increase over the non-

"Academic programs in Engineering include: Biological, Chemical, Civil, Computer, Electrical, Environmental, Industrial, Materials, Mechanical and Mining."

pilot students in their understanding of how much they achieved on their work term. And, they rated the time invested in their assignments as more worthwhile to them than the non-pilot group. When asked if they would recommend the work term assignments to their peers, only 34% of the non-pilot group said yes, while 74% of the pilot group said they would.

Our next steps are to complete the analysis and draft our recommendations for the new curriculum and funding requirements for Engineering Faculty to review by Fall 2010. We are also exploring ways to incorporate some of these curriculum elements into the Computer Science Co-op Program. If you would like more detailed information on any aspect of this project, please contact me at amc@dal.ca

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Experience is a Powerful Instructor
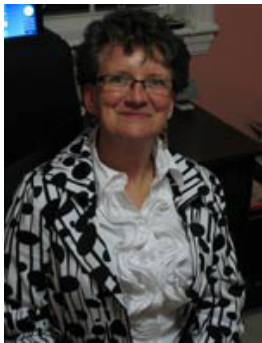
Margaret Dechman, Sociology and Social Anthropology

The Department of Sociology and Social Anthropology has developed an experiential-learning class to assist students in better understanding how to apply their theoretical and research based training outside the university gates. Social scientific perspectives and concepts are brought to life through volunteer placements in settings such as schools, hospitals, law offices, special-education facilities, and community organizations.

Although students in the Majors Seminar share a social science background, they have diverse future plans. While some are searching for direction, the majority are considering further education and/or employment in areas such as elementary, secondary, or English as a second language teaching; social work; law; occupational therapy; or medicine. Similar to the development of an honour's thesis, students in the Majors Seminar prepare a comprehensive paper and present their findings through an open forum at the end of the academic year. This final product reflexively integrates experiential learning with relevant research findings and theoretical insights.

Rather than developing a specific research question, the seminar begins with the identification of relatively broad domains of interest such as criminal law, secondary education, medicine, elder care, or environmental design. Volunteer placements are then sought within these general areas. Students interested in the aforementioned areas obtained placements as: a support worker with an organization assisting women in conflict with the law, an in-school tutor, a hospital patient counsellor, a recreation leader in an extended-care facility, and a research assistant for a library redesign project.

After having identified a general area of interest and secured a related placement, the student's next challenge is to situate their placement experiences within sociological/anthropological frames of reference. Through the preparation of an annotated bibliography and literature review, class discussions, and meetings with the instructor, students gradually focus on more theme-based areas of study. Although numerous students may begin in the same general area, their particular experiences, readings, and future goals tend to lead in different directions. For example, among the three students interested in secondary education this year, one is focusing on the effects of streaming, another on teachers' roles in developing self-fulfilling prophecies, and the third on the importance of social context in math instruction.

Pertinent theoretical concepts and perspectives are introduced and/or reviewed during the second term of the Majors Seminar. As such concepts are described, students are encouraged to provide examples from their placements. It is through the sharing of such experiences that connections begin to be made at higher levels of social analyses. Students come to see how the impacts of cultural, social, and economic forces spread across many domains of life. Rather than appearing abstract and irrelevant, such perspectives become pertinent to students' professional and personal lives. In the words of one student: "Over the first three years of my university experience I really did not take in or understand that much about the theories of sociology. It was not until the Majors Seminar that I really began to understand… and relate [these theories] to situations that I came across."

> *"One of the greatest dangers of critical deconstructive academic discourse is the tendency to fuel feelings of hopelessness as students recognize the magnitude and complexity of social problems."*

Although the design of the class directs students' thinking toward the larger social forces that underlie what are often approached as individual or personal problems, the real value of the class comes from the sharing of placement experiences. Once a collaborative atmosphere is established, students enthusiastically exchange insights

pertaining to the challenges faced not only in their own but also in their classmates' placements. Thus, each student benefits from the input of numerous views, yielding a more comprehensive and sensitive understanding of the complex worlds in which we live, study, and work.

Comments from the placement sponsors suggest that this collaborative and mutually enhancing approach extends beyond the classroom into interactions with the community. Because the Majors Seminar promotes a service-based agenda, students are often described by those in the sponsoring agencies as a breath of fresh air. For example, a student hospital volunteer received accolades for his unique capacity to listen to patients' concerns without any personal or hidden agenda. Having recognized the value our students bring to their organizations, sponsors are now requesting future student placements.

The breath of fresh air described by the sponsors is bidirectional. One of the greatest dangers of critical deconstructive academic discourse is the tendency to fuel feelings of hopelessness as students recognize the magnitude and complexity of social problems. Placements provide a balancing effect by exposing students to a variety of avenues through which individuals can make a difference in the lives of others, both individually and through meaningful social reform. In the words of one student, the placement provides: "a welcome opportunity to expand interactions outside the university bubble… Through this placement, I've met passionate people, people who work hard to make differences in society and people who are

"Social scientific perspectives and concepts are brought to life through volunteer placements..."

constantly thinking of new and inventive ways to contribute to projects. It is also through this placement that I've gathered motivation and inspiration to seek out future opportunities in fields I had not considered a year ago."

Whether their future paths lead into law, education, or health care, the Majors Seminar offers students an opportunity to try on new roles and responsibilities while benefitting from the continuing support of fellow students and their instructor. The combination of experiential learning with insights gained from the social sciences provides a solid foundation from which students can approach the challenges that lie ahead with realistic confidence and a sensitivity to social justice.
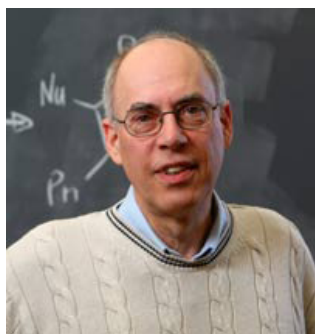
2010 Dalhousie Alumni Award of Excellence for Teaching

Dr. Jean Burnell, Chemistry Department *"Teachers should be masters of their subject and teach in a manner, and at a level, that is appropriate."*

"He teaches the class with only a marker in hand and comes with nothing else. I have overheard on numerous occasions that students find this an impressive display of his knowledge, control and familiarity with the subject… Dr. Burnell's belief is that his priority is to his students." ~ from a graduate student

2010 Dalhousie Sessional and Part-Time Instructor Award of Excellence for Teaching

Dr. Taghrid Abou-Hassan, French Department *"My goal is to give students the opportunity to develop a spirit of inquiry towards the subject at hand, and then nourish that spirit."*

"What sets Professor Abou-Hassan apart from the rest is that she genuinely cares for her students and wants them to improve their French skills. She is inspriational and I hope to one day find a job that I will enjoy as much as she does hers." ~ from a student

Learning the Way to Advanced Practice Nursing

Marilyn MacDonald,
School of Nursing

The Master of Nursing program prepares nurses for advanced practice. Advanced practice involves "analyzing and synthesizing knowledge, understanding, interpreting, and applying nursing theory and research, and developing and advancing nursing knowledge and the profession as a whole" (CNA, 2008). Advanced practice competencies include providing expert guidance for both nurses and clients, consultation to all members of the health care team, acting as a change agent by moving evidence into practice, and collaboration specifically in the context of ethical dilemmas (Hamric, Spross & Hanson, 2005). Nurses learn to enact these competencies through the acquisition of clinical expertise combined with an understanding and application of nursing and related theories to actual practice situations. The curriculum is designed for students to develop the leadership, problem-solving and application of theory necessary for advanced practice.

Two of the courses in the program will be used to illustrate how the learning experience can be varied. These courses are NURS5435 and 5436 Adult Nursing: Theory and Practice/Clinical I and II. These courses are sequential and have a weekly classroom seminar and in addition to this, the students spend six hours a week in a selected clinical setting where they identify, develop, implement, and evaluate a project to improve care delivery while enhancing the quality of life for patients and families. During NURS5435, students are challenged to explore and reflect on a series of societal issues such as the economy, technology, human resources, generational variations, gender, social inequities, sources of knowledge, processes of care delivery, and to examine how these issues play out in the clinical setting. This learning is intended to prepare the students for the contextual issues that may be encountered in NURS5436, as they endeavor to implement the projects developed in NURS5435. Initially, students are challenged in finding a fit between the identified project and theory. This process, however, is soon replaced with the challenge of being the change agent as implementation nears. Despite the fact that students have worked with a core group of individuals over a period of time on a project of

"The student uses nursing and related theories learned in the classroom to guide the development, implementation, and evaluation of their identified projects."

interest to all involved, as the time approaches to move the work into practice there are always surprises. This serves as a very worthwhile lived experience for students to take with them into advanced practice where they will be regularly relied upon for expertise, leadership, and change.

On my arrival at Dalhousie I had been in clinical practice for more than two decades and spent one decade as an advanced practice nurse. In this role I worked to advance nursing clinical practice by integrating evidence into practice, undertaking major clinical change projects, and mentoring nurses to advance their clinical practice. This served as the ideal backdrop to prepare me to teach The Adult Theory/Clinical courses. One unique aspect of these courses is the clinical practicum associated with the courses.

Purpose

The clinical practicum component of these courses provides for the direct application of theoretical concepts relevant to the course, and first hand experience as a change agent. Students in theses courses are practicing nurses primarily in hospital settings and from a variety of specialty areas. A master's degree is a requirement to be an advanced practice nurse

and to fulfill roles such as the Clinical Nurse Specialist or Nurse Practitioner. Students must conduct the practicum in an area other than where they currently work. This requirement puts students outside of their comfort zone and helps them more fully experience the process of project conception, development, implementation, evaluation, and collaboration.

Course Objectives

Upon completion of the course students should be able to:

• Critically analyze the existing literature, and in combination with one's clinical knowledge and expertise, assess the present state of the knowledge for theoretical relevance and application to practice within the context of the selected clinical nursing specialty.

• Critically examine the altered health states that are using most of the existing illness care resources in relation to the design of health care interventions and determine if these interventions are aimed at providing ethical care and improving quality of life.

• Identify in collaboration with stakeholders in the chosen practice setting and the course professor a project aimed at improving the health and quality of life of care recipients and their families.

• Explore the notion that nurses are historically and culturally constituted as persons with expert clinical and theoretical knowledge and are therefore capable of and responsible for transforming the healthcare system.

• Evaluate the effects of research (new knowledge) transfer strategies on the process and outcome of care delivery in selected clinical practice settings.

Clinical Practicum

In these courses students work with a clinical preceptor to identify areas of practice requiring innovation or development. The preceptor is normally a Master's prepared nurse who serves as a mentor and a facilitator on the project. The student uses nursing and related theories learned in the classroom to guide the development, implementation, and evaluation of their identified projects. For many students this represents the first time they have been responsible for all phases of a project situated in their workplace context in an organizational setting and they learn first-hand how organizations work, how committed employees can be to maintaining existing practice, and the difficult, yet important work of collaboration. Students also learn that not all groups are ready for change and that this can be an opportunity to help prepare a group for change.

Evaluation of student learning has four components. In NURS5435 students (a) prepare a personal reflection (5 page) paper on the proposed project and briefly outline the theory, (b) submit a progress report in conjunction with the preceptor, (c) deliver an oral presentation to the class explaining the theory and its' application to the project, and (d) submit a 15-20 page paper describing the project, setting, stakeholders, objectives, literature review of the project topic, in-depth theoretical explanation, plans for implementation and evaluation. In NURS5436 students proceed with implementation and evaluation of the project, (a) submit a progress report as outlined above, (b) present the implementation and evaluation process in class paying particular attention to linking the theory to the practice project, and (c) submit a final version of the paper that was started in NURS5435. This paper will incorporate the feedback given at the end of NURS5435 as well as a detailed presentation of implementation and evaluation, once again linking theses aspects to the selected theory.

Student Experiences

Students select the areas where they want to conduct the practicum and they also select a preceptor as well. The areas normally chosen are of some particular interest to the student, and the preceptor is normally in a leadership role in the area chosen by the student. Organizing the practicum requires reflection and initiative on the part of the student. Once an area has been identified, then the student works with the personnel to identify what the project will be and carries out the work necessary for development, implementation, and evaluation of the project.

To illustrate how the practicum works, two project examples are briefly outlined and a third is presented in detail below.

The first example is of individuals with kidneys that do not function properly who are placed on a procedure called dialysis. These people need to learn to do

a lot of their own care. Part of the care process is learning to start and stop treatments. One of the projects involved developing the teaching materials necessary for patients to be independent in self-care related to treatments. The theory used to guide this project was Orem's Self-Care Deficit Nursing Theory. This theory guides the student in the assessment and intervention necessary to determine the client's level of ability to manage self-care, and to intervene to the extent necessary to support the client in being as independent as possible in self-care.

A second example involves improving nurses' success in maintaining long stay catheters placed in patients' veins. These catheters have become widely used in the past ten years and have contributed to patient comfort because patients do not need to be pricked as often to obtain blood samples or to start fluid therapy through their veins. The consistency and length of these catheters lends to the possibility of them becoming clogged. The purpose of this project is to develop a combined instructional and self-learning module for nurses guided by Bandura's Social Cognitive Theory. This theory is based on the premise that individuals will successfully acquire new skills if attention is paid to the factors of environment, personal, and behavior. Environmental means assuring the quality of the content and the instructor, personal means motivation to learn and is assessed using a self-efficacy scale, behavior is the result of the interaction of the environment and the personal factors.

A third example will be focused on in more length and concerns the well-known phenomenon of crowded hospital Emergency departments (ED). Children with sore throats are often taken to the ED and since this condition is not considered to be an emergency, the wait times can be long. Many of these cases are viral in nature and do not need an antibiotic. Advances in technology have provided what is known as the rapid strep antigen test. Results can be known in twenty minutes and if the test is positive the client needs to see a physician for a prescription. If not, the nurse can provide sore throat management information to the accompanying adult and discharge the client.

Statement of the Problem: Prior to the clinical practicum project, all clients presenting to the ED with a sore throat had to wait to see a physician before any test was ordered. The focus of the clinical practicum project was to have nurses follow an approved protocol to assess clients arriving with sore throat, order the rapid strep antigen test if indicated, verify the results, and based on the results, either inform the client they needed to wait to see the physician, or the nurse proceeded with the necessary counseling and discharged the client.

This sounds like a reasonably straight-forward project, however, considerable groundwork was necessary before any of the actual project development began. First, the medical staff, who traditionally ordered all tests and discharged all clients from the ED, needed to be in support of the project. Second, the administrative staff of the hospital and the ED nursing staff had to be in support of the project. Third, this new process represented an expansion of the scope of practice of the ED nurses and the College of Registered Nurses of Nova Scotia was consulted for their approval. This phase was not linear and a great deal of back and forth negotiating occurred among all stakeholders with the student as the point person for all areas of concern.

The adaptation of an existing evidence-informed assessment form for nurses, and the development of client/family information packages was a straightforward process. At the outset of the practicum the student had some sense of the number of players who would be involved but was most surprised by the amount of time needed to bring all stakeholders to consensus. The student used Kotter's (1996) Leading Change Theory to guide the project, and came to realize the value in the use of theory not only to guide the project but also in sustaining the momentum that the change agent needs to see a project through to completion. The student went on to publish this work (Houk & Macdonald, 2008), demonstrating how projects can not only expand the student's professional development experience, but also have the potential to inform the community more broadly beyond the specific location of the original project.

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2010 Recipient of the Dalhousie President's Graduate Teaching Assistant Award

Sarah Crawford, Ph.D. Candidate, Chemistry Department *"I believe it is important to have laboratory experiments that are designed to reinforce concepts that have been introduced in the classroom setting, while providing opportunities for students to develop and practice practical skills necessary for organic chemistry."*

"Sarah is always ready and willing to answer questions and help a troubled undergrad. She made me think about how to arrive at an answer to a problem, and she showed me how to perform a technique properly for the first time. Sarah is a great TA." ~ from a student

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